ORDER NO. KM48710548C1
F5

Service Manual

EASA-PHONE

EMSS PROPRIETARY TELEPHONE

KX-T123230

SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ
IC DATA\ДАННЫЕ МИКРОСХЕМЫ
BLOCK DIAGRAM\БЛОК-СХЕМА
IC BLOCK DIAGRAM\БЛОК-СХЕМА МИКРОСХЕМЫ
ACCESSORIES AND PACKING MATERIALS\ДОПОЛНИТЕЛЬНЫЕ ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ
TERMINAL GUIDE OF IC·S, TRANSISTORS AND DIODES\ЦОКОЛЕВКА МИКРОСХЕМ, ТРАНЗИСТОРОВ И ДИОДОВ
SCHEMATIC DIAGRAM\ПРИНЦИПИАЛЬНАЯ СХЕМА
ADJUSTMENTS\РЕГУЛИРОВКИ
CABINET AND ELECTRICAL PARTS LOCATION\РАСПОЛОЖЕНИЕ ЧАСТЕЙ КОРПУСА И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ
REPLACEMENT PARTS LIST\СПИСОК ЗАПАСНЫХ ЧАСТЕЙ

Matsushita Services Company
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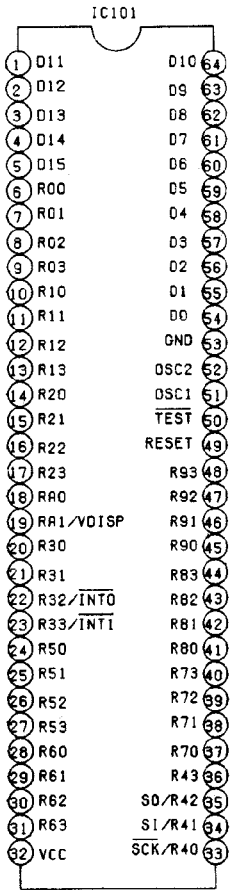
Panasonic

■ SPECIFICATIONS

Ringer Equivalence:	1.0 B
Station Loop Limit:	40 ohms
Cabling Method:	2 pair wire
Jacks:	EMSS, Handset/Headset
Display:	16 digits (max.)
Dimensions:	158 (W)×95 (H)×228 (D) mm with handset (6 7/32"×3 3/4"×8 31/32")
Weight:	1 kg (2 lb 3.2 oz)

Design and specifications are subject to change without notice.

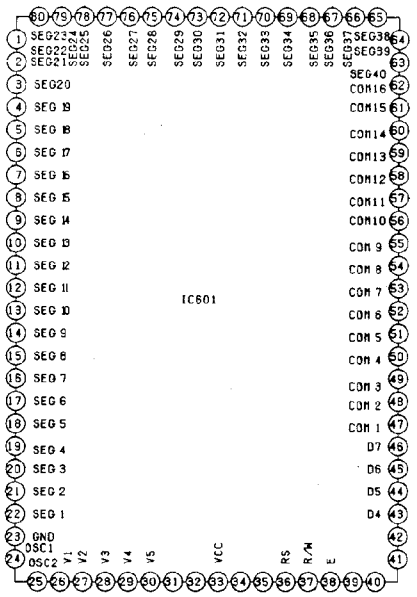
IC DATA



IC101:	PQVI4045SF76
Program ROM:	4K Byte (4 bit)
Internal RAM:	1K bit
Clock Frequency:	2.5 MHz
Power Supply Voltage:	2.7–6 V

Pin No.	Mark	Function	High	Low
1	D11	LED Control Output	ON	OFF
2	D12	LED Control Output	ON	OFF
3	D13	LED Control Output	ON	OFF
4	D14	LED Control Output	ON	OFF
5	D15	LED Control Output	ON	OFF
6	R00	LED Control Output	ON	OFF
7	R01	LED Control Output	ON	OFF
8	R02	LED Control Output	ON	OFF
9	R03	LED Control Output	ON	OFF
10	R10	Handset Mute	ON	OFF
11	R11	Not used	——	——
12	R12	LED Control	ON	OFF
13	R13	SP-Phone Relay Control	ON	OFF
14	R20	Tone Control Output	ON	OFF
15	R21	Tone Control Output	ON	OFF
16	R22	Tone Control Output	ON	OFF
17	R23	Tone Control Output	ON	OFF
18	RA0	Data Input	Disable	Enable
19	RA1/VDISP	Ground	——	——

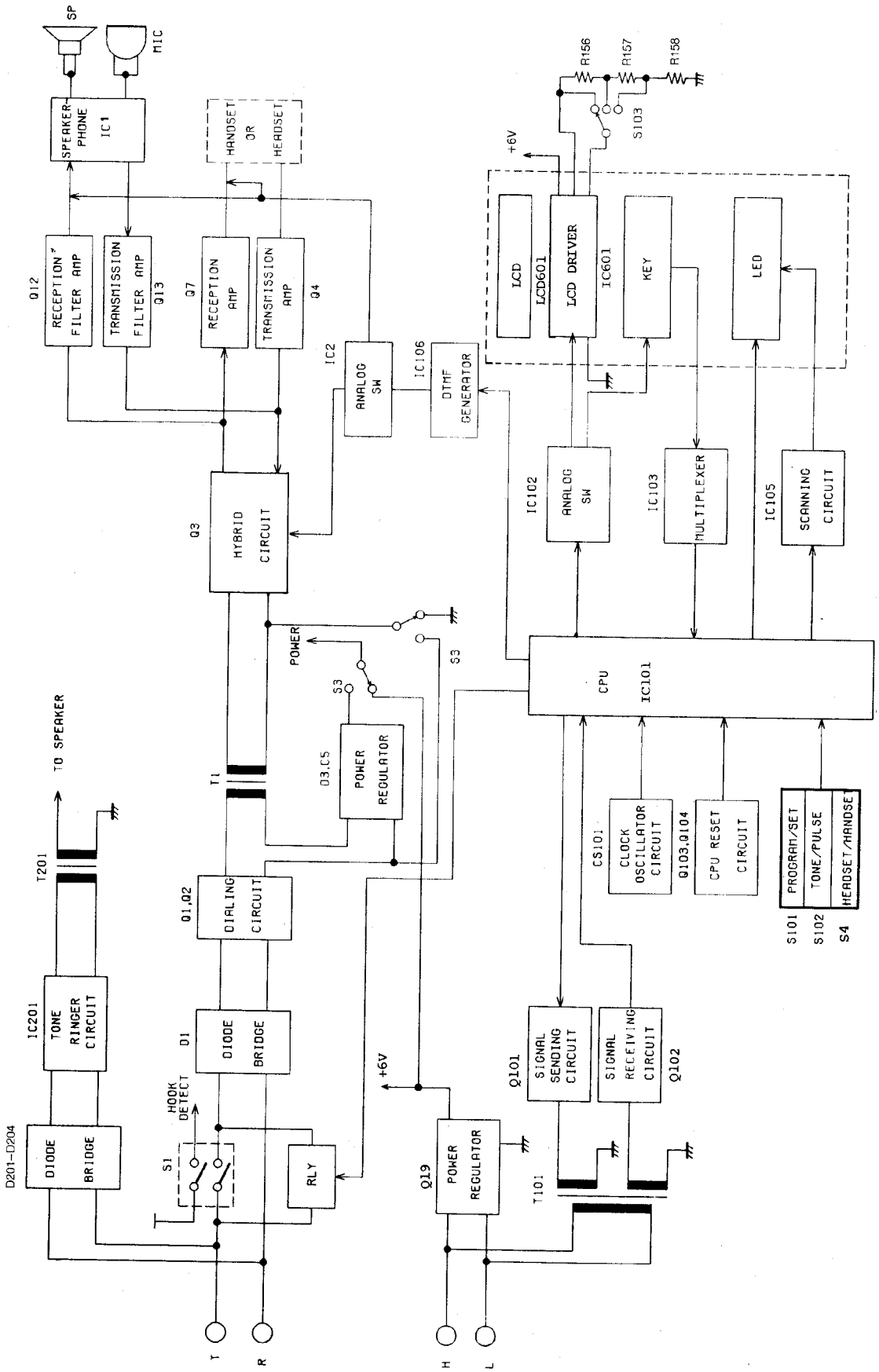
Pin No.	Mark	Function	High	Low
20	R30	Key Input	Disable	Enable
21	R31	Key Input	Disable	Enable
22	R32/$\overline{INT0}$	Interrupt Input	Standby	Active
23	R33/$\overline{INT1}$	Interrupt Input	Standby	Active
24	R50	Key Data Input/LCD Data Ouput	(LCD) ——— (Key) Disable	(LCD) ——— (Key) Enable
25	R51	Key Data Input/LCD Data Ouput		
26	R52	Key Data Input/LCD Data Ouput		
27	R53	Key Data Input/LCD Data Ouput		
28	R60	Key-Scan Output/LCD Data Output	Normal	Active
29	R61	Key-Scan Output/LCD Data Output	Normal	Active
30	R62	Key-Scan Output/LCD Data Output	(LCD) Normal	(LCD) Active
31	R63	Key-Scan Output/LCD Data Output	(Key) Normal	(Key) Normal
32	Vcc	(+) Power Source Terminal	———	———
33	$\overline{SCK}$/R40	Interrupt Output	Disable	Enable
34	SI/R41	DTMF Control	Normal	Active
35	S0/R42	DTMF Control	Normal	Active
36	R43	DTMF Control	Normal	Active
37	R70	DTMF Control	Normal	Active
38	R71	DTMF Control	Normal	Active
39	R72	DTMF Control	Normal	Active
40	R73	DTMF Control	Normal	Active
41	R80	Handset Power Control Output	ON	OFF
42	R81	Chip Select Control Output	OFF	ON
43	R82	SP-Phone SP Mute Control Output	ON	OFF
44	R83	SP-Phone MIC Mute Control Output	ON	OFF
45	R90	Power Fail Detect Input	Power Down	Normal
46	R91	Key Input (Tone/Pulse Select Input)	Tone	Pulse
47	R92	Key Input (One Touch Dial Program SW Input)	Program	Set
48	R93	Hook Data Input	Off-Hook	On-Hook
49	RESET	System Reset Input	———	———
50	$\overline{TEST}$	———	———	———
51	OSC1	System Clock	———	———
52	OSC2	System Clock	———	———
53	GND	Ground	———	———
54	D0	DTMF Control Output	Enable	Disable
55	D1	LED Reset Signal Output	Active	Normal
56	D2	Pulse Output	Make	Break
57	D3	LCD Enable Control Output	Active	Normal
58	D4	Key Input/LCD Output Control	ON	OFF
59	D5	Data Input Control	Normal	Active
60	D6	Data Input	Disable	Enable
61	D7	Data Output	Active	Normal
62	D8	LED Control Output	ON	OFF
63	D9	LED Control Output	ON	OFF
64	D10	LED Control Output	ON	OFF



IC601: PQVIHD44780
Display Data RAM: 80×8 bits
Character Generator ROM: 160 characters

Pin No.	Mark	Function	High	Low
1 ~ 22	SEG 22 ~ SEG 1	LCD Segment Signal Output	40 State Output	
63 ~ 80	SEG 40 ~ SEG 23			
23	GND	Ground		
24 25	OSC 1 OSC 2	System Clock		
26 ~ 30	V1 ~ V5	Power Supply for LCD		
31 32		Not used		
33	Vcc	Power Supply		
34 35		Not used		
36	RS	Signal to select Resistors	Data Resistor	Instruction Resistor/ Address Resistor
37	R/W	Signal to Select Read and Write	Read	Write
38	E	Operation Start Signal for Data R/W	Active	Normal
39 ~ 42		Not used		
43 ~ 46	D4 ~ D7	Data Bus		
47 ~ 62	COM 1 ~ COM 16	LCD Common Signal Output	16 State Output	

BLOCK DIAGRAM



IC BLOCK DIAGRAM

IC103 PQVITC7H42P

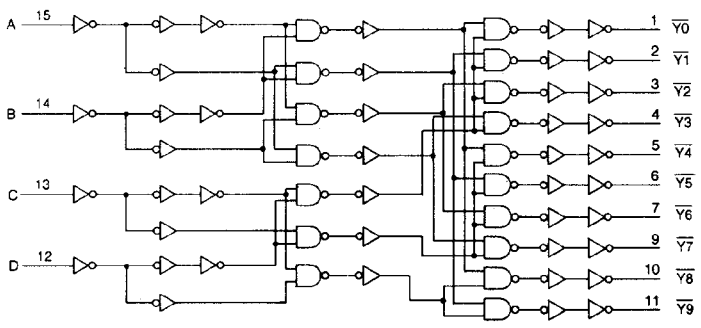


Fig. 9

IC105 PQVITC4017BP

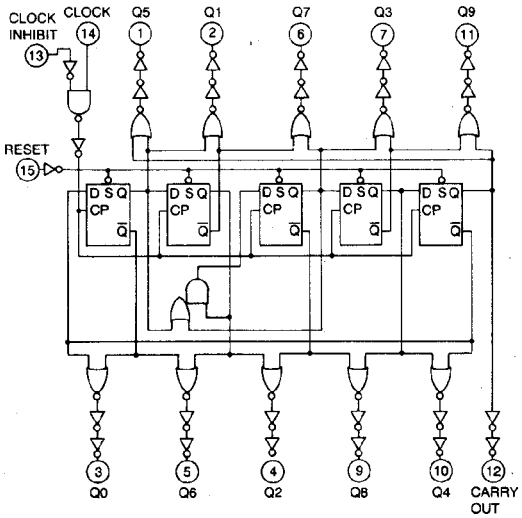


Fig. 10

IC201 PQVIIR3N34A

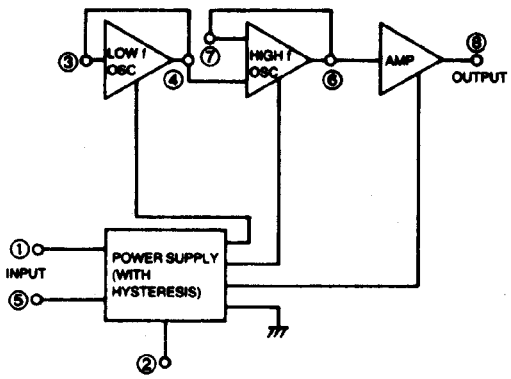


Fig. 11

ACCESSORIES AND PACKING MATERIALS

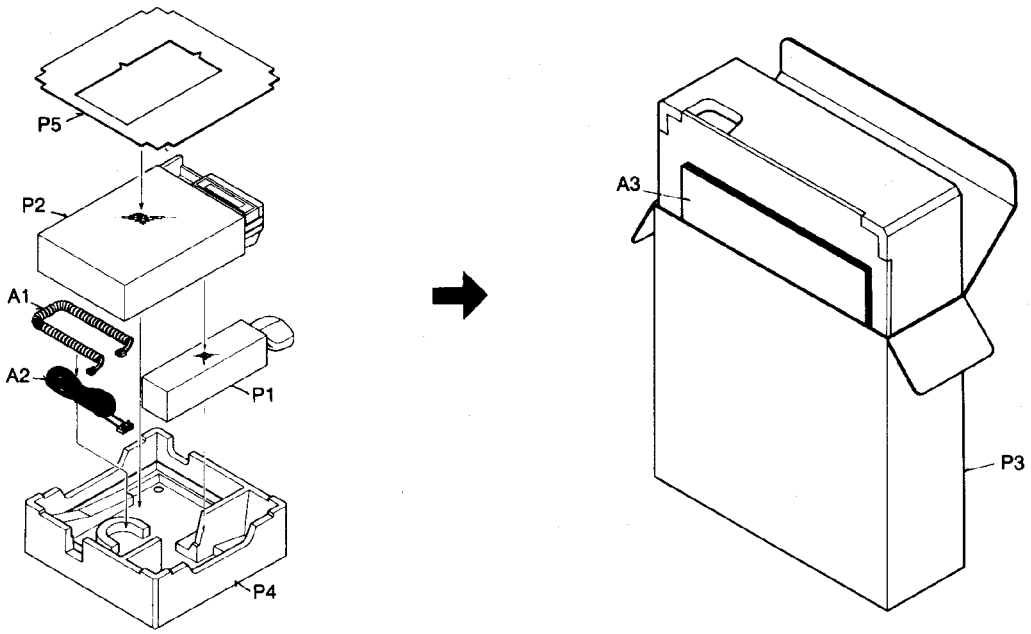


Fig. 12

TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

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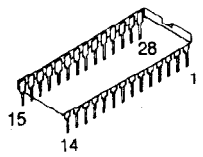
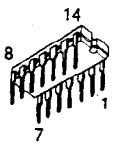
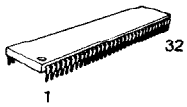
<td> 

IC1</td>
<td colspan="2"> 

IC2, 102, 104</td>
<td> 

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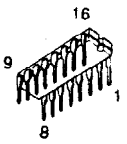
<td> 

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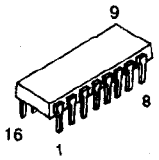
<td> 

IC106</td>
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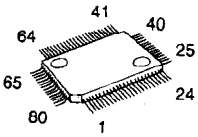
IC201</td>
<td> 

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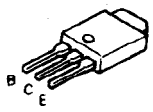
<td> 

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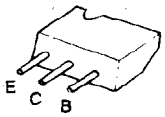
<td> 

Q2, 103, 104</td>
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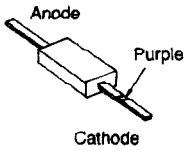
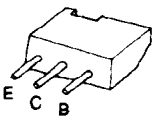
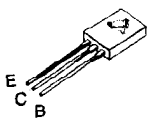
<td> 

D622</td>
<td colspan="2"> 

Q3–8, 12–18, 30, 101, 102 106–120, 201</td>
<td> 

Q19</td>
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D1, 22</td>
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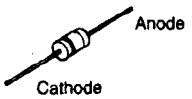
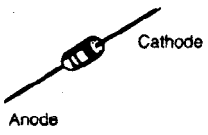
<td> 

D205</td>
<td> 

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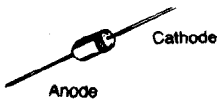
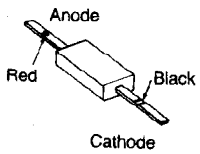
<td colspan="2"> 

D7, 9, 14, 20, 21, 23, 102, 104–113, 117, 201–204</td>
<td> 

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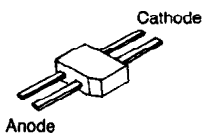
<td> 

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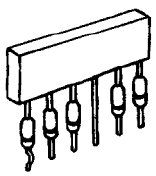
<td> 
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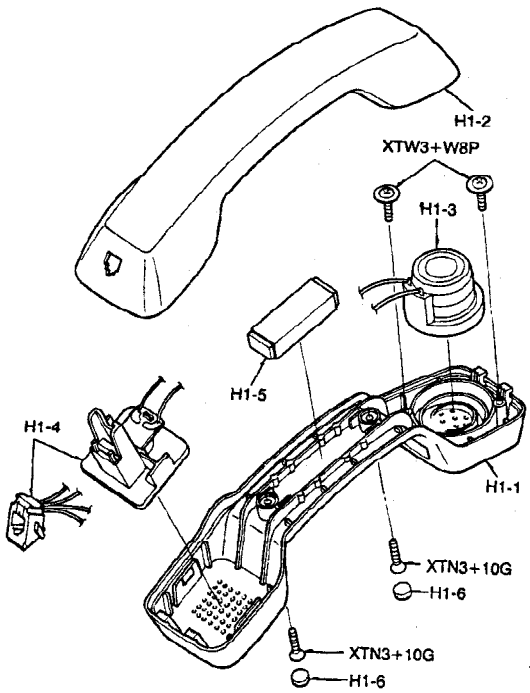
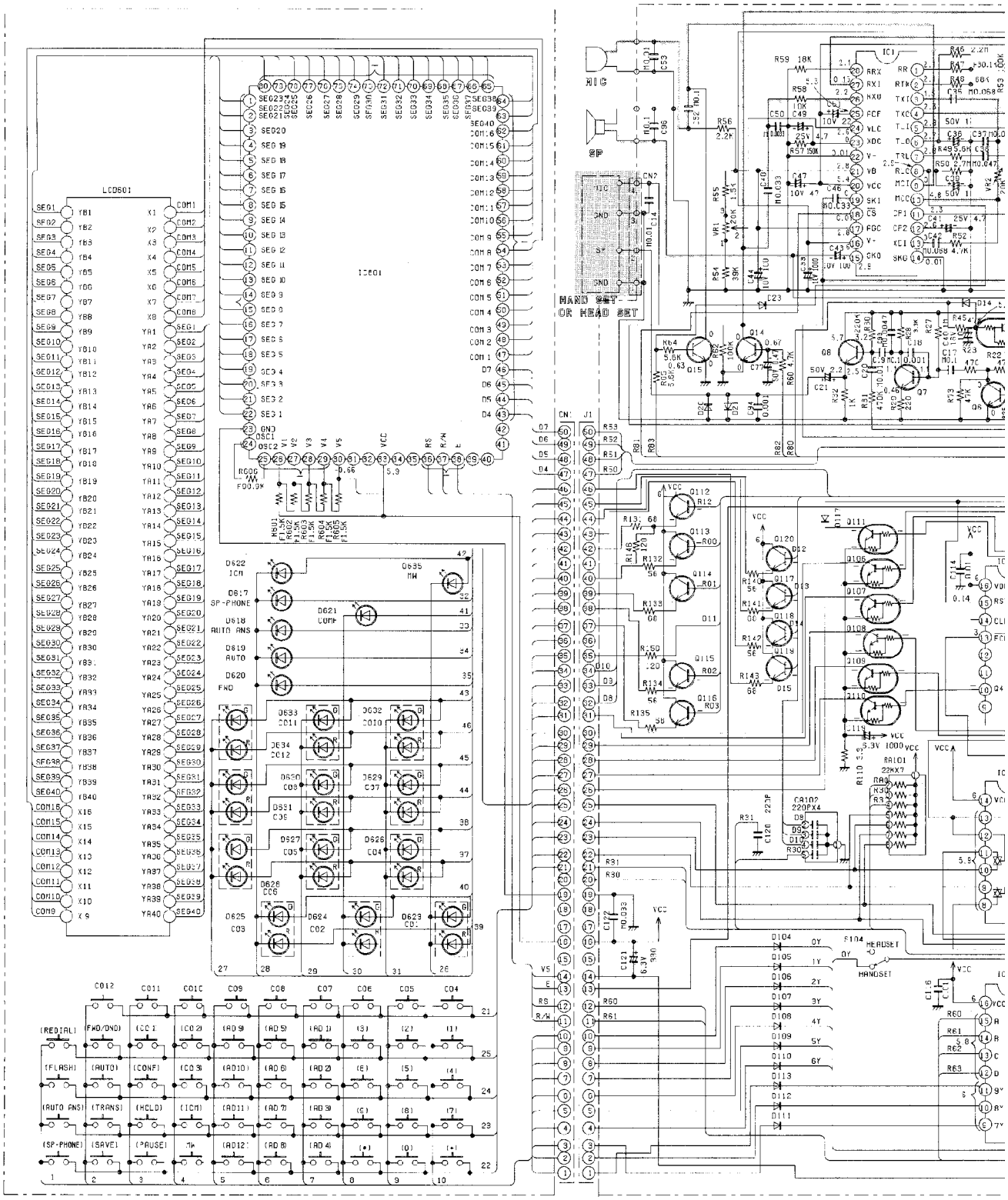
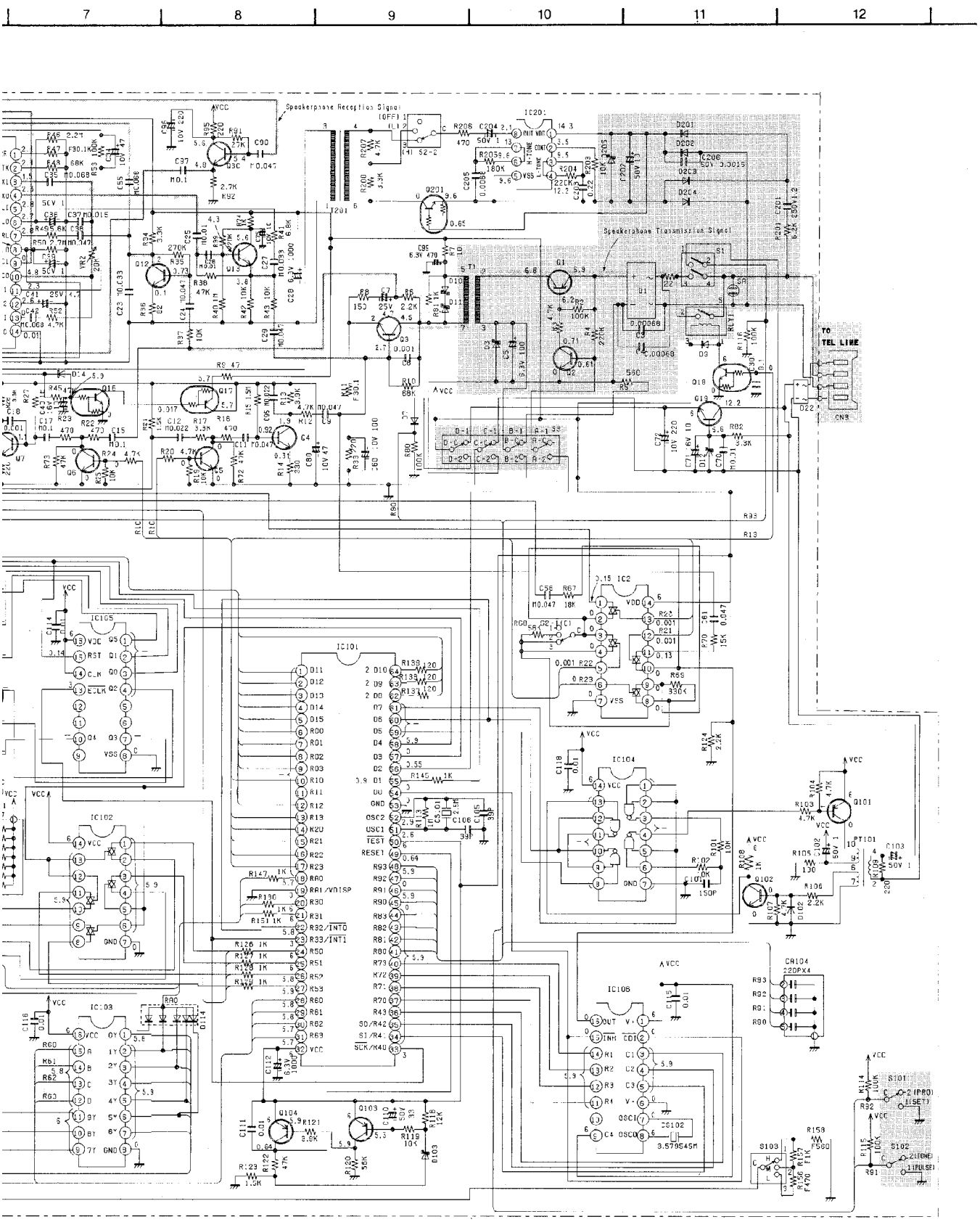
HANDSET PARTS LOCATION




MIC
SP
HAND SET
OR HEAD SET
LCD601
IC601
IC1
CN1
CN2
J1
HEADSET
HANDSET
(REDIAL)
(FWD/DND)
(FLASH)
(AUTO)
(CONF)
(AUTO ANS)
(TRANS)
(HOLD)
(SP-PHONE)
(SAVE)
(PAUSE)

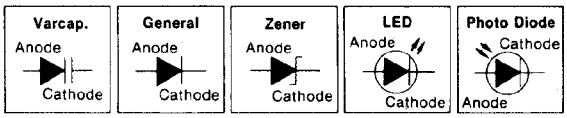
C DIAGRAM


7
8
9
10
11
12
Speakerphone Receptive Signal
Speakerphone Transmission Signal
TO TEL LINE
IC101
IC102
IC103
IC104
IC105
IC106
IC201
Q101
Q102
Q103
Q104
S101
S102
S103
VCC
AVCC
GND

■ FOR SCHEMATIC DIAGRAM

Notes:

1. S1: Hook switch.
2. S2: Ringer volume selector switch in "HIGH" position.
3. S3: Power failure switch.
4. S4: Handset/Headset switch in "HANDSET" position.
5. S101: Memory switch in "PROGRAM" position.
6. S102: Dialing mode switch in "TONE" position.
7. S103: Contrast selector switch in "H" position.
8. S200: Dial switch. (Rubber switch)
9. DC voltage measurements are taken with electronic voltmeter from ground (Q1, Q2 standard point: Q2 emitter).
   (Off-Hook condition
   IC1, Q12, Q13 and Q30...Speakerphone ON condition)
10. This schematic diagram may be modified at any time with the development of new technology.



Important safety notice

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

•ICs, TRANSISTORS AND DIODES FUNCTION NAME

Ref. No.	Part No.	Function Name	Ref. No.	Part No.	Function Name
IC1	PQVISC77655P	SPEAKERPHONE	Q110, 111	DTC143EA	SWITCHING
IC2	PQVIPD4066BC	ANALOG SWITCH	Q19	2SC1567	REGULATOR
			Q101	2SA937	SWITCHING
IC101	PQVI4045SF76	CPU	Q103,104	2SB641	SWITCHING
IC102	PQVITC4066BP	ANALOG SWITCH	Q109	UN1224	SWITCHING
IC103	PQVITC7H42P	MULTIPLEXER			
IC104	PQVITC4011BP	NAND GATE	D1,22	PQVDS1YB40F1	RECTIFIER
IC105	PQVITC4017BP	DECADE COUNTER	D3	MA2051	REGULATOR
IC106	PQVILR4089	GENERATOR	D7,9,14,20	1SS131	SWITCHING
IC201	PQVIIR3N34A	TONE RINGER	21,23,102,		
IC601	PQVIHD44780	LCD DRIVER	104~113,		
			117,201~204		
Q1	2SA1400	SWITCHING	D10,11	MA4047	LIMITER
Q2	2SD662B	SWITCHING	D12	MA4068	REGULATOR
Q3,4,7,8,12,	2SC2021	AMPLIFIER	D103	MA4036	SWITCHING
13,30,102			D114	PQXDF030372	SWITCHING
112~116			D205	MA4300	REGULATOR
Q5,6,14,15	2SD1469	SWITCHING	D617~621, 635	LN01201CU3LF	LED
Q16,201	DTC144A	SWITCHING			
Q17	DTA143XA	SWITCHING	D622	LN01301C3LF1	LED
Q18, 106~108	DTC143EA	SWITCHING	D623~634	LN02102C13LF	LED

ADJUSTMENTS

●Perform the following adjustment after replacing IC1.

Test Equipment:

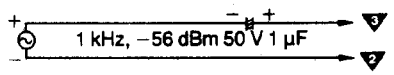
Loop Simulator, DC Power Supply
RC Oscillator
VTVM

Preparation:

1. Set the unit's controls as follows:
   A. VOLUME CONTROL—"MAX"
2. Connect Test Points ▼1–▼2 and ▼4–▼5.
3. Disconnect the microphone in the unit.
4. Set the variable resistor of the loop simulator to maximum resistance (fully counterclockwise).
5. Connect the DC power supply.
   (Set voltage...12 V)
6. Connect the unit to the loop simulator.
7. Make all adjustments in a quiet room.
8. After all adjustments are made, disconnect Test Points ▼1–▼2, ▼4– ▼5 and connect the microphone.

Transmission Level:

1. Set the loop simulator selector switch to "TX".
2. Connect the RC Oscillator to Test Point ▼2(−)–▼3(+), and connect an electrolytic capacitor (50 V, 1 µF) as shown below.
3. Set RC Oscillator to 1 kHz, −56 dBm.



4. Connect the VTVM to loop simulator.
5. Adjust VR2 for a reading of −17 dBm, ±0.5 dB, on the VTVM.

Please refer to Printed Circuit Board which is located test points (▼).

Schematic Diagram of Loop Simulator

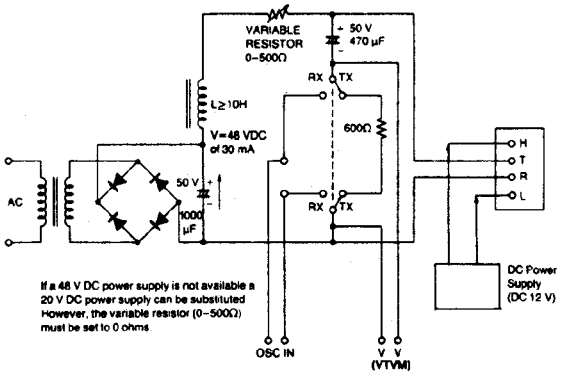


Fig. 14

HANDSET WIRING CONNECTION DIAGRAM

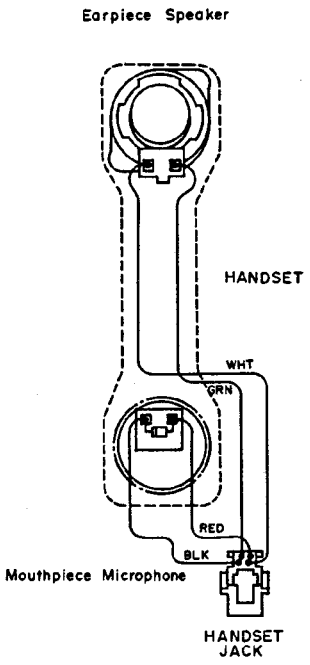


Fig. 15

CABINET AND ELECTRICAL PARTS LOCATION

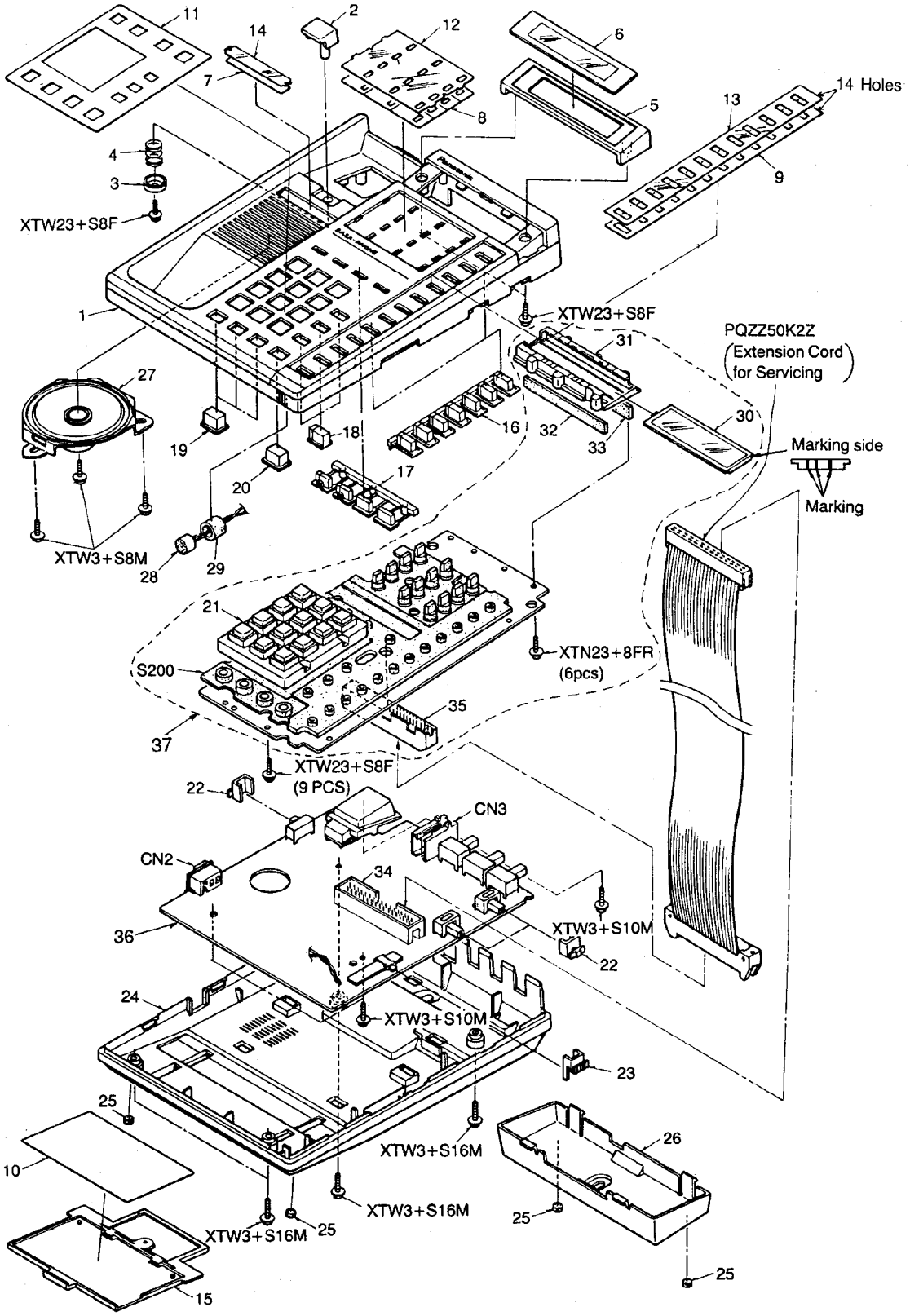


Fig. 16

REPLACEMENT PARTS LIST

Notes: Model KX-T123230

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set..
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms(Ω) k=1000Ω,M=1000kΩ
   All capacitors are in MICRO FARADS(μF) P= μF
   *Type &Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQRD:Carbon
ERD:Carbon	ERG:Metal Oxide	PQRQ:Fuse
PQ4R:Chip	ERO:Metal Film	ERF:Wire Wound

Wattage

10,16,18:1/8W	14,25,S2:1/4W	12,50,S1:1/2W	1:1W	2:2W	3:3W

Type

ECFD:Semi-Conductor	ECCD,ECKD,PQCBC:Ceramic
ECQS:Styrol	ECQM,ECQV,ECQG,ECQE:Polyster
PQCBX,ECUV:Chip	ECEA,ECSZ,ECEB:Electrolytic
ECMS:Mica	ECQP:Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H: 50V	05: 50V	OF:3.15V	OJ :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :63V
2H:500V		OJ:6.3V	1E,25:25V	2A :100V

Ref. No.	Part No.	Part Name & Description	Pcs	
		INTEGRATED CIRCUITS, TRANSISTORS & DIODES		
IC1	PQVISC77655P	IC	1	
IC2	PQVIPD4066BC	IC	1	
IC101	PQVI4045SF76	IC	1	
IC102	PQVITC4066BP	IC	1	
IC103	PQVITC7H42P	IC	1	
IC104	PQVITC4011BP	IC	1	
IC105	PQVITC4017BP	IC	1	
IC106	PQVILR4089	IC	1	
IC201	PQVIIR3N34A	IC	1	
IC601	PQVIHD44780	IC	1	
Q1	2SA1400	Transistor (Si)	1 ⚠	
Q2	2SD662B	Transistor (Si)	1 ⚠	
Q3,4,7,8 Q12,13, Q30,102 Q112-Q120	2SC2021	Transistro (Si)	17	
Q5,6, Q14,15	2SD1469	Transistor (Si)	4	
Q16,201	DTC144A	Transistor (Si)	2	S
Q17	DTA143XA	Transistor (Si)	1	S
Q18,106 Q107, Q108, Q110, Q111	DTC143EA	Transistor (Si)	6	
Q19	2SC1567	Transistor (Si)	1	
Q101	2SA937	Transistor (Si)	1	
Q103, Q104	2SB641	Transistor (Si)	2	
Q109	UN1224	Transistor (Si)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	
D1,22	PQVDS1YB40F1	Diode (Si)	2 ⚠	
D3	MA2051	Diode (Si)	1	
D7,9, D14,20, D21,23, D102, D104-D113, D117, D201-D204	1SS131	Diode (Si)	22	
D10,11	MA4047	Diode (Si)	2	
D12	MA4068	Diode (Si)	1	
D103	MA4036	Diode (Si)	1	
D114	PQXDF030356	Diode (Si)	1	
D205	MA4300	Diode (Si)	1	
D617-D621, D635	LN01201CU3LF	LED	6	
D622	LN01301C3LF1	LED	1	
D623-D634	LN02102C13LF	LED	12	
		SWITCHES		
S1	PQSH1B08Z	Switch, Hook	1 ⚠	
S2	PQSS3B09Z	Switch, Ringer Volume	1	
S3	PQSS2D01V	Switch, Power Failure	1	
S4	PQSS2A25Z	Switch, Handset/Headset	1	
S101, S102	PQSS2A12V	Switch, Memory, Dialing Mode	2 ⚠	
S103	PQSS3A14Z	Switch, Contrast	1	
S200	PQSE70Z	Switch, Dial (Rubber Switch)	1 ⚠	
RLY1	PQSL7Z	Relay	1	
		TRANSFORMERS		
T1	ETA19Y64BF	Call Transformer	1 ⚠	
T101	ETE13K24AY	Interface Transformer	1	
T201	PQLT2D2B	Interface Transformer	1	
		OTHERS		
VR1	PQVAL202B24A	Volume Control, 20kΩ(B)	1	
VR2	PQNB3A00B24M	Semi-Fixed, 20kΩ(B)	1	S
RA101	PQRS8B7223J	Component Combination, Resistor Array	1	
CA102, CA104	PQXF4WB05	Component Combination, Capacitor Array	2	
SA	PQVDDSS401M	Varistor (Surge Absorber)	1	
CS101	PQVCX2500N9	Crystal Oscillator	1	
CS102	PQVBT3.58G3	Ceramic Filter	1	
		JACKS		
CN2	PQJJ1TB10Z	Jack, Handset/Headset	1 ⚠	
CN3	PQJJ1TB15Z	Jack, Telephone (EMSS)	1 ⚠	
		HANDSET PARTS		
H1	PQJX2PE403Y	Handset Assembly	1	
H1-1	PQKM121Y81	Lower Cabinet	1	
H1-2	PQKF104Z81	Upper Cabinet	1	
H1-3	PQAX4P03Z	Earpiece Speaker	1	
H1-4	PQWMJX403Y	Mouthpiece Microphone Assembly	1	
H1-5	PQHM32Y	Weight	1	
H1-6	PQHG695W	Rubber Cap	2	

Ref. No.	Part No.	Part Name & Description	Pcs
		CABINET AND ELECTRICAL PARTS	
1	PQKM83T8	Upper Cabinet	1
2	PQKE20Z9	Hanger, Handset	1
3	RMS35Z	Bracket, Handset Hanger M'tg	1
4	PQUS65Z	Spring	1
5	PQGK50Z	Ornament	1
6	PQGP48Z	Transparent Plate, LCD	1
7	PQHP532X	Card, TEL. No.	1
8	PQHP542Z	Card, Memory Station	1
9	PQHP570Z	Card, COL	1
10	PQHP583Z	Card, Speed Dial (Memory)	1
11	PQHP561Z	Card, Overlay	1
12	PQHR5005Z	Transparent Plate, Memory Station Card	1
13	PQHR5043Z	Transparent Plate, COL Card	1
14	PQHR576Z	Transparent Plate, TEL. No. Card	1
15	PQHR9152Y	Cover, Speed Dial Card	1
16	PQBCX40Z	Button, Station	2
17	PQBCX20Z	Button, CONF/FWD,DND/PAUSE/TRANS	1
18	PQBC114Z	Button, AUTO/AUTO ANS/SP-PHONE	3
19	PQBC115Z	Button, SAVE/REDIAL/FLASH	3
20	PQBC115Z1	Button, HOLD	1
21	PQBCX25Z	Button, Dial (Assembly)	1
22	PQBD62Z	Knob, Ringer, Contrast, Handset/Headset	3
23	PQBD63Z	Knob, Volume	1
24	PQKF73S7	Lower Cabinet	1
25	RHG1028Z	Rubber Parts, Leg	4
26	PQKL10Z	Stand	1
27	PQAS65P06V	Speaker	1
28	RJM142Z	Microphone	1 S
29	PQHG503Z	Rubber Parts, Microphone Cover	1
30	PQADLR110C	LCD (LCD601)	1
31	PQHR9156Y	Holder, LCD	1
32	PQSE51Z	Connector, LCD	1
33	PQSE52Z	Connector, LCD	1
34	PQJP50D30Y	Connector, 50P (CN1)	1
35	PQJS50X33Y	Connector, 50P (CN601)	1
36	PQWP1T123230	Main P.C. Board Assembly (NLA)	1
37	PQWP2T123230	Dial P.C. Board Assembly (NLA)	1
		ACCESSORIES	
A1	PQJA30T	Handset Cord	1 ⚠
A2	PQJA48Y	Telephone Cord	1 ⚠
A3	PQQX5445Z	Instruction Book (User Guide)	1
		PACKING MATERIALS	
P1	PQPH27Y	Protection Cover (for Handset)	1
P2	XZB26x40A01	Protection Cover (for Unit)	1
P3	PQPK492Z	Gift Box	1
P4	PQPN592Z	Pad, Lower	1
P5	PQPN593Z	Pad, Upper	1

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
		RESISTORS			
R1	ERD25TJ220	22	R15	ERD16TJ155	1.5M
R2	ERD16TJ104	100k ⚠	R16	ERD16TJ471	470
R3	ERD16TJ472	4.7k ⚠	R17	ERD16TJ332	3.3k
R4	ERD16TJ224	220k ⚠	R18	Not Used	
R5	ERD16TJ561	560 ⚠	R19	ERD16TJ103	10k
R6	ERD16TJ222	2.2k	R20	ERD16TJ472	4.7k
R7	ERD16TJ100	10	R21	ERD16TJ152	1.5k
R8	ERD16TJ151	150	R22	ERD16TJ471	470
R9	ERD16TJ470	47	R23	ERD16TJ471	470
R10	ERD16TJ683	68k	R24	ERD16TJ472	4.7k
R11	ERO16CKF30R1	30.1	R25	ERD16TJ103	10k
R12	ERD16TJ472	4.7k	R26	Not Used	
R13	ERD16TJ392	3.9k	R27	ERD16TJ105	1M
R14	ERD16TJ331	330	R28	ERD16TJ332	3.3k

Ref. No.	Part No.	Value	Ref No.	Part No.	Value
R29	ERD16TJ221	220	R106	ERD16TJ222	2.2k
R30	ERD16TJ224	220k	R107	ERD16TJ472	4.7k
R31	ERD16TJ474	470k	R108	ERD16TJ102	1k
R32	ERD16TJ102	1k	R109	ERD16TJ221	220
R33	ERD16TJ221	220	R110	ERD16TJ150	15
R34	ERD16TJ332	3.3k	R111	Not Used	
R35	ERD16TJ274	270k	R112	Not Used	
R36	ERD16TJ820	82	R113	ERD16TJ105	1M
R37	ERD16TJ103	10k	R114	ERD16TJ104	100k
R38	ERD16TJ473	47k	R115	ERD16TJ104	100k
R39	ERD16TJ224	220k	R116	ERD16TJ104	100k
R40	ERD16TJ105	1M	R117	Not Used	
R41	ERD16TJ682	6.8k	R118	ERD16TJ123	12k
R42	ERD16TJ103	10k	R119	ERD16TJ103	10k
R43	ERD16TJ103	10k	R120	ERD16TJ563	56k
R44	Not Used		R121	ERD16TJ392	3.9k
R45	ERD16TJ473	47k	R122	ERD16TJ473	47k
R46	ERD16TJ225	2.2M	R123	ERD16TJ152	1.5k
R47	ERO16CKF3012	30.1k	R124	ERD16TJ222	2.2k
R48	ERD16TJ683	68k	R125	Not Used	
R49	ERD16TJ562	5.6k	R126	ERD16TJ102	1k
R50	ERD16TJ275	2.7M	R127	ERD16TJ102	1k
R51	Not Used		R128	ERD16TJ102	1k
R52	ERD16TJ472	4.7k	R129	ERD16TJ102	1k
R53	ERD16TJ104	100k	R130	ERD16TJ102	1k
R54	ERD16TJ393	39k	R131	ERD16TJ680	68
R55	ERD16TJ152	1.5k	R132	ERD16TJ560	56
R56	ERD16TJ222	2.2k	R133	ERD16TJ680	68
R57	ERD16TJ154	150k	R134	ERD16TJ560	56
R58	ERD16TJ103	10k	R135	ERD16TJ680	68
R59	ERD16TJ183	18k	R136	Not Used	
R60	ERD16TJ472	4.7k	R137	ERD16TJ121	120
R61	Not Used		R138	ERD16TJ121	120
R62	ERD16TJ104	100k	R139	ERD16TJ121	120
R63	Not Used		R140	ERD16TJ560	56
R64	ERD16TJ562	5.6k	R141	ERD16TJ680	68
R65	ERD16TJ562	5.6k	R142	ERD16TJ560	56
R66	Not Used		R143	ERD16TJ680	68
R67	ERD16TJ183	18k	R144	Not Used	
R68	ERD16TJ563	56k	R145	ERD16TJ102	1k
R69	ERD16TJ334	330k	R146	ERD16TJ121	120
R70	ERD16TJ153	15k	R147	ERD16TJ102	1k
R71	Not Used		R148	Not Used	
R72	ERD16TJ473	47k	R149	Not Used	
R73	ERD16TJ473	47k	R150	ERD16TJ121	120
R74	ERD16TJ102	1k	R151	ERD16TJ102	1k
R75	Not Used		R152	Not Used	
R76	Not Used		R153	Not Used	
R77	Not Used		R154	Not Used	
R78	Not Used		R155	Not Used	
R79	Not Used		R156	ERO16CKF4700	470
R80	ERD16TJ104	100k	R157	ERO16CKF1021	1.02k
R81	ERD16TJ102	1k	R158	ERO16CKF5600	560
R82	ERD16TJ332	3.3k			
R83	Not Used		R201	PQRD1TJ622	6.2k
R84	Not Used		R202	Not Used	
R85	Not Used		R203	ERD16TJ103	10k
R86	Not Used		R204	ERD16TJ224	220k
R87	Not Used		R205	ERD16TJ184	180k
R89	Not Used		R206	ERD16TJ471	470
R89	Not Used		R207	ERD16TJ472	4.7k
R90	Not Used		R208	ERD16TJ332	3.3k
R91	ERD16TJ273	27k			
R92	ERD16TJ272	2.7k			
R93	Not Used		R601	ERO10LKF1501	1.5k
R94	Not Used		R602	ERO10LKF1501	1.5k
R95	ERD16TJ221	220	R603	ERO10LKF1501	1.5k
R96	Not Used		R604	ERO10LKF1501	1.5k
R97	Not Used		R605	ERO10LKF1501	1.5k
R98	Not Used		R606	ERO10LKF9092	90.9k
R99	Not Used				
R100	Not Used				
R101	ERD16TJ103	10k			
R102	ERD16TJ103	10k			
R103	ERD16TJ472	4.7k			
R104	ERD16TJ472	4.7k			
R105	ERD16TJ101	100			

Ref. No.	Part No.	Value	Ref No.	Part No.	Value
C1	Not Used		C78	Not Used	
C2	Not Used		C79	Not Used	
C3	ECKD2H681KB	680P ⚠	C80	ECEA1CKS470	47 S
C4	ECKD2H681KB	680P ⚠	C81	Not Used	
C5	ECEA1CK101	100 S	C82	Not Used	
C6	Not Used		C83	Not Used	
C7	ECEA1HK4R7	4.7 S	C84	Not Used	
C8	ECKD1H102KB	0.001	C85	Not Used	
C9	ECFD1E473MD	0.047 S	C86	Not Used	
C10	Not Used		C87	Not Used	
C11	ECFD1E473MD	0.047 S	C88	Not Used	
C12	ECFD1E223MD	0.022	C89	Not Used	
C13	Not Used		C90	ECFD1E473MD	0.047 S
C14	PQCBC1C103MY	0.01	C91	Not Used	
C15	ECFD1C104MD	0.1	C92	Not Used	
C16	Not Used		C93	PQCBC1C472MX	0.0047
C17	ECFD1C104MD	0.1	C94	ECKD1H102KB	0.001
C18	ECKD1H102KB	0.001	C95	ECFD1E223MD	0.022
C19	ECFD1C104MD	0.1	C96	ECFD1C104MD	0.1
C20	PQCBC1C103MY	0.01	C97	ECFD1C104MD	0.1
C21	ECEA1HKS2R2	2.2	C98	ECEA1AU221	220
C22	Not Used		C99	ECEB0JU471	470
C23	ECFD1C333MD	0.033	C100	Not Used	
C24	ECFD1E473MD	0.047 S	C101	ECCD1H151JC	150P
C25	PQCBC1C103MY	0.01	C102	ECEA50Z1	1
C26	PQCBC1C103MY	0.01	C103	ECEA1HK010	1
C27	ECFD1C333MD	0.033	C104	Not Used	
C28	ECEA0JU102	1000	C105	ECCD1H390KC	39P
C29	ECFD1E473MD	0.047 S	C106	ECCD1H390KC	39P
C30	ECFD1C104MD	0.1	C107	Not Used	
C31	Not Used		C108	Not Used	
C32	Not Used		C109	Not Used	
C33	ECEA0JU102	1000	C110	ECEA1VU330	33
C34	ECEA1CKS470	47 S	C111	ECKD1H103MD	0.01
C35	ECFD1C683MD	0.068	C112	ECEA0JU102	1000
C36	ECEA1HK010	1	C113	Not Used	
C37	ECFD1E153MD	0.015	C114	ECKD1H103MD	0.01
C38	ECFD1E473MD	0.047 S	C115	ECKD1H103MD	0.01
C39	ECEA1HK010	1	C116	ECKD1H103MD	0.01
C40	ECEA1CKS100	10	C117	Not Used	
C41	ECEA1HK4R7	4.7 S	C118	ECKD1H103MD	0.01
C42	ECFD1C683MD	0.068	C119	ECEA0JU102	1000
C43	ECEA1CK101	100 S	C120	ECKD1H221KB	220P
C44	ECEA1AU101	100	C121	ECEA0JU331	330
C45	Not Used		C122	ECFD1C333MD	0.033
C46	ECFD1C333MD	0.033			
C47	ECEA1CKS470	47 S	C201	ECQE2125KZ	1.2 ⚠
C48	ECFD1C333MD	0.033	C202	ECEA1HKS100	10
C49	ECEA1HK4R7	4.7 S	C203	ECQV1H224JZ	0.22
C50	ECKD1H332MD	0.0033	C204	ECEA1HK010	1
C51	ECEA0JKS220	22	C205	ECQM1H682JV	0.0068
C52	ECFD1C104MD	0.1	C206	ECKD1H152MD	0.0015 ⚠
C53	PQCBC1C103MY	0.01			
C54	Not Used				
C55	ECFD1C683MD	0.068			
C56	ECFD1E473MD	0.047 S			
C57	Not Used				
C58	Not Used				
C59	Not Used				
C60	ECEA1CK101	100 S			
C61	ECQV1H473JZ	0.047			
C62	Not Used				
C63	Not Used				
C64	Not Used				
C65	Not Used				
C66	Not Used				
C67	Not Used				
C68	Not Used				
C69	Not Used				
C70	PQCBC1C103MY	0.01			
C71	ECEA1CKS100	10			
C72	ECEA1AU221	220			
C73	Not Used				
C74	Not Used				
C75	ECEA1CKS100	10			
C76	Not Used				
C77	ECEA1HK4R7	4.7			